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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/585,378
Filing Date: April 06, 2007
Appellant(s): SIXT ET AL.

Michael J. Striker
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/2/11 appealing from the Office action mailed 10/6/10.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 30-32, 34, 35, 38, 44-51 are pending in the current application.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

6,467,299	Coetzee	10-2002
6,068,882	Ryu	5-2000
6,209,343	Owen	4-2001
3,858,410	Drake	1-1975
5,355,684	Guice	10-1994
5,934,099	Cook et al.	8-1999
52,269	Connelly	1-1866
JP09243223A	Yomei	9-1997
6,032,481	Mosby	3-2000
6,119,465	Mullens et al.	9-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 30-32, 34-35, 38, 44-51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The recitations of “said refrigerant being a pure organic substance” (claim 30 lines 10-11) and “said refrigerant is a refrigerant selected from the group consisting of" followed by the specific refrigerants as required by the claim (claim 50 lines 1-4) is not disclosed in the specification and it is unclear what types of refrigerants are purely organic and how the specific refrigerants as recited in claim 50 can be used in the transport container. A person of ordinary skill in the art at the time of invention would have known that a pure organic substance is a substance which contains only organic material and the specific refrigerants as recited in claim 50 have a phase transformation between a solid and liquid state similar to that of -15 to -100 degrees Celsius as recited in claim 1. For purposes of this examination, the pure organic substance is considered to be all organic material and the specific refrigerants in claim 50 have a similar phase transformation of between -15 to -100 degrees Celsius in order for the transport container to function properly.

Claim 49 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had

possession of the claimed invention. The recitation “a refrigerant which melts/solidifies as the temperature is less than -85 degrees Celsius” is not in the original specification, rather a phase transformation of the refrigerant occurs between -30 to -85 degrees Celsius. A person of ordinary skill in the art at the time of invention would have known that a phase transformation occurring below -85 degrees Celsius would require a refrigerant that has specific properties in order to allow it to be cooled to such a temperature. For purposes of this examination, it is interpreted that the phase transformation cannot exceed a temperature lower than -100 degrees Celsius.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 30, 32, 46 and 48-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee US Patent No. 6,467,299 B1 and Ryu US Patent No. 6,068,882 and further in view of Owen US Patent No. 6,209,343 B1 and Drake US Patent No. 3,858,410.

Regarding claim 30, Coetzee teaches in figs. 1 and 2, a transport container capable of keeping frozen material chilled, comprising an insulating chamber (chamber that container 16 fits into), an insulation 12 that encloses said insulating chamber, an inner container 16 arranged in said insulating chamber, said inner container 16 having at least one chilling chamber 13 for the material and at least one refrigerant chamber (chamber between 16 and 18) which is permanently hermetically sealed (according to fig. 2, chamber between 16 and 18 is fully enclosed), and a refrigerant 14 located in said refrigerant chamber and giving off cold by solid/liquid phase transformation (Coetzee discloses using many types of refrigerants in solid, liquid and gel form, column 3 lines 13-56). Coetzee does not teach an insulation which is a superinsulation, no insulation between said inner container and said chilling chamber or the refrigerant being a pure organic substance undergoing the phase transformation between sold and liquid state in a temperature range from -15 degrees Celsius to -100 degrees Celsius and having a heat of melting of at least 50 J/ml.

Ryu teaches a superinsulation with a coefficient of thermal conductivity of 0.005 W/m K that is used in cryogenic (low temperature) applications (column 1 line 51-column 2 line 16). Ryu further teaches superinsulation materials and selecting the appropriate material based on the intended temperature for use (column 5 lines 16-18). Ryu fails to explicitly teach a superinsulation with a coefficient of thermal conductivity of less than 0.005 W/m K. The claimed range of valves of the superinsulation of less than 0.005W/m K is recognized as a result effective variable, i.e. a variable which achieves a recognized result. In this case, an insulation with a lower coefficient of thermal

conductivity results in a higher R-value (resistance) of the insulation, making it a more efficient insulation. An insulation with a higher coefficient of thermal conductivity results in a lower R-value of the insulation, making the insulation less efficient, stated another way, allows more heat to transfer through the insulation as compared to an insulation with a low coefficient of thermal conductivity. A person of ordinary skill in the art could arrive at a thermal conductivity coefficient of less than 0.005 without undue experimentation in order to increase the amount of time the frozen material is able to be transported, preventing damage to the material.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Coetzee with the teachings of Ryu to include a superinsulation in order to provide a cost effective and easy to handle insulation for cryogenic applications as well as an insulation having superior performance characteristics (Ryu column 1 lines 50-53 and column 2 lines 58-60). Coetzee as modified by Ryu fails to explicitly teach no insulation between said inner container and said chilling chamber or said refrigerant being a pure organic substance undergoing phase transformation between sold and liquid state in a temperature range from -15 degrees Celsius to -100 degrees Celsius and having a heat of melting of at least 50 J/ml.

Owen teaches in fig. 1, an inner container 10 arranged in an insulating chamber (chamber formed by 20a, 20b that 10 is inserted into), the inner container 10 having a chilling chamber 5 such that there is no insulation between said inner container 10 and said chilling chamber 5. With the proper tooling and force, the inner container 10 can be removed from the insulating chamber.

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the combined teachings of Coetzee and Ryu with the teachings of Owen to include no insulation between said inner container and said chilling chamber in order to increase the amount of heat transfer that occurs between the sample being cooled and the refrigerant. The increase in heat transfer rate will allow the material to stay frozen for a longer period of time, preserving the material until needed. Coetzee as modified by Ryu and Owen fails to explicitly teach a refrigerant that is a pure organic substance undergoing phase transformation between solid and liquid state in a temperature range from -15 degrees Celsius to -100 degrees Celsius and having a heat of melting of at least 50 J/ml.

Drake teaches a reusable heat sink means in a cooler undergoing a phase change such as mercury (column 2 lines 8-23, mercury is known in the art to have a phase change at a temperature of -39 degrees Celsius which is in the range of -15 to -100 degrees Celsius).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu and Owen with the teachings of Drake to include a refrigerant with a phase change temperature of -39 degree Celsius in order to use the transport container with a variety of applications that require cooling of a material at temperatures below ambient temperature. Coetzee as modified fails to explicitly teach the refrigerant being a pure organic substance and having a heat of melting of at least 50 J/ml. It would have been obvious matter of design choice to modify Coetzee to include a refrigerant being a pure organic substance and having a

heat of melting of at least 50 J/ml, since applicant has not disclosed that having a pure organic substance or a heat of melting of at least 50 J/ml solves any stated problem or is for any particular purpose and it appears that the transport container would perform equally well with the mercury refrigerant as disclosed by Drake or with a refrigerant with a heat of melting that is sufficient to provide cooling to the transport container for long periods of time. The use of a pure organic refrigerant allows the refrigerant to be less toxic, thereby having the ability to use a refrigerant within the transport container which is environmentally friendly.

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the combined teachings of Coetzee, Ryu, Owen and Drake to use a pure organic substance as the refrigerant in the transport container that has a heat of melting of 50 J/mL in order to use a refrigerant that is environmentally friendly and less toxic than other refrigerants that can provide cooling to a biological sample for a long period of time, preventing the sample from thawing and becoming damaged due to warmer temperatures.

Regarding claim 32, Coetzee as modified above teaches the invention as disclosed and Coetzee further teaches in fig. 2, wherein said refrigerant chamber (chamber between 16 and 18) is configured like said chilling chamber 13 in said inner container 16.

Regarding claim 46, Coetzee as modified above teaches the invention as disclosed and Coetzee further teaches in fig. 2, said insulation 12 is configured as a cup with said insulating chamber (chamber that container 16 fits into) which is adapted to said inner container 16 and is closable by an insulating closure 28 (column 3 lines 44-46).

Regarding claim 48, Coetzee as modified above teaches the invention as disclosed and Drake further teaches the refrigerant is a refrigerant which melts/solidifies as the temperature is less than -30 degrees Celsius. Drake teaches mercury as the refrigerant and as noted above, mercury is known in the art to have a phase transformation of -39 degrees Celsius, thereby meeting the limitation of the claim.

Regarding claim 49, Coetzee as modified above teaches the invention as disclosed but fails to explicitly teach said refrigerant is a refrigerant which melts/solidifies as the temperature is less than -85 degrees Celsius. However, it would have been obvious to a person of ordinary skill in the art at the time of invention select a refrigerant which melts/solidifies as the temperature is less than -85 degrees Celsius, since it has been held to be within the general skill of a worker in the art to select known material on the basis of its suitability for the intended use as a matter of obvious design choice. The use of a refrigerant that melts/solidifies at this temperature will allow the material to be kept frozen for a longer period of time, resulting in further preservation of the material.

Regarding claim 50, Coetzee as modified above teaches the invention as disclosed but fails to explicitly teach the refrigerant is selected from the group as claimed. However, it would have been obvious to a person of ordinary skill in the art at the time of invention select a refrigerant from the group as claimed, since it has been held to be within the general skill of a worker in the art to select known material on the basis of its suitability for the intended use as a matter of obvious design choice. Furthermore, it would have been obvious matter of design choice to modify Coetzee as modified by using a pure organic substance from the group as claimed, since applicant has not disclosed that utilizing a pure organic substance or any of the refrigerants as claimed solves any stated problem or is for any particular purpose and it appears that the transport container would perform equally well with any pure organic substance that is capable of cooling the biological sample for a long period of time.

Regarding claim 51, Coetzee as modified above teaches the invention as disclosed and Ryu further teaches a superinsulation with a coefficient of thermal conductivity of 0.005 W/m K that is used in cryogenic (low temperature) applications (column 1 line 51-column 2 line 16). Ryu further teaches superinsulation materials and selecting the appropriate material based on the intended temperature for use (column 5 lines 16-18). Coetzee as modified fails to explicitly teach a superinsulation has a coefficient of thermal conductivity of less than 0.002 W/m K. The claimed range of valves of the superinsulation of less than 0.005W/m K is recognized as a result effective

variable, i.e. a variable which achieves a recognized result. In this case, an insulation with a lower coefficient of thermal conductivity results in a higher R-value (resistance) of the insulation, making it a more efficient insulation. An insulation with a higher coefficient of thermal conductivity results in a lower R-value of the insulation, making the insulation less efficient, stated another way, allows more heat to transfer through the insulation as compared to an insulation with a low coefficient of thermal conductivity. A person of ordinary skill in the art could arrive at a thermal conductivity coefficient of less than 0.002 without undue experimentation in order to increase the amount of time the frozen material is able to be transported, preventing damage to the material.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu, Owen and Drake as applied to claim 30 above and further in view of Guice US Patent No. 5,355,684.

Regarding claim 31, Coetzee as modified discloses the invention as claimed above and Ryu further teaches a superinsulation with a coefficient of thermal conductivity of less than 0.01 W/m K but fails to explicitly teach a chilling jacket with a jacket chamber with a second refrigerant, and an insulating jacket of a superinsulation.

However, Guice teaches in fig. 2, a chilling jacket 34 having a jacket chamber (chamber defined by 34) which contains a refrigerant 28 with a solid/liquid phase transition in a temperature range from 0 to -15 degrees Celsius, and an insulating jacket 38 which shields said chilling jacket 34 from outside, and contains insulation (column 6 lines 49-65 and column 9 line 58-column 10 lines 16). Guice discloses in column 8 a

mixture of ethylene glycol and water which can be varied depending on how long the shipment needs to stay cold. Therefore, the mixture can be adjusted to perform a phase transformation at a range of 0 to -15 degrees Celsius.

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu, Owen and Drake with the teachings of Guice to include a chilling jacket with a jacket chamber and an insulating jacket surrounding it that when combined with Coetzee as modified the insulating jacket would have a superinsulation with a coefficient of thermal conductivity of less that 0.01 W/m K in order to protect the cryogenically insulated vessel from mechanical damage as well as providing extra thermal insulation in order to preserve the sample for the allotted amount of storage time (Guice column 10 line 66-column 11 line 2).

Claims 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu, Owen and Drake as applied to claim 30 above and further in view of Cook et al. US Patent No. 5,934,099.

Regarding claim 34, Coetzee as modified discloses the invention as claimed above and Coetzee further teaches in fig. 2, the inner container is composed of a low temperature resistant plastic high density polyethylene (column 3 lines 19-34). It is well known in the art that this material has a high resistance to low temperatures and is used in applications for housing and protecting vials of biomedical samples.

Cook teaches in figs. 1 and 2, a refrigerant container 14 with a refrigerant chamber 62 for arrangement in said insulating chamber 28.

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu, Owen and Drake with the teachings of Cook to include an additional refrigerant chamber in order to increase the rate of heat transfer from the sample container to the refrigerant containers in order to keep the temperature sensitive sample cooled for the allotted period of storage time.

Regarding claim 35, Coetzee as modified above teaches the invention as disclosed but fails to explicitly teach the refrigerant chamber has a filling opening, and wherein said filling opening is welded closed.

However Cook teaches in fig. 2, a refrigerant chamber 62 has a filling opening 44 wherein the filling opening is welded closed (column 6 lines 15-64).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu, Owen and Drake with the teachings of Cook to include the refrigerant chamber has a filling opening and wherein the opening is welded closed in order to provide a means for filling the chamber with refrigerant. The use of welding will ensure that the refrigerant does not leak out and contaminate the frozen material or the surrounding environment.

Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu, Owen and Drake as applied to claim 30 above and further in view of Connelly US Patent No. 52,269.

Regarding claim 38, Coetzee as modified discloses the invention as claimed above but fails to explicitly teach the refrigerant chamber has a filling opening closed by a screw stopper and welded closed on an outside.

However, Connelly teaches in fig. 2, a filling opening on a bottle is closed on an inside by a screw stopper (column 1 paragraph 2). Regarding the welding of the stopper on the outside after it is inserted into the filling opening, the general concept of welding and such permanent attachment methods are well known in the art. The welding of the stopper would prevent the stopper from accidentally becoming unscrewed and the possibility of the refrigerant contaminating the sample in the container.

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu, Owen and Drake with the teachings of Connelly to include a stopper and welding, that when combined with Coetzee, the refrigerant chamber would have a filling opening which is closed on an inside by a screw stopper and welded closed on an outside in order to seal the container in which liquids or other materials are kept in order to exclude the air within the container (Connelly paragraph 2).

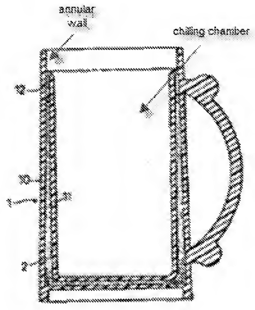
Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu, Owen and Drake as applied to claim 30 above and further in view of Yomei JP Publication No. 09243223 A.

Regarding claim 44, Coetzee as modified above teaches the invention as disclosed but fails to explicitly teach said inner container has a double walled hollow cylinder including an inner wall and an outer wall and also a bottom at one end and an annular wall at the other end, said refrigerant chamber being formed between said inner wall and said outer wall, and said annular wall and said bottom, and said chilling chamber being arranged centrally and delimited by said inner wall and said bottom.

However, Yomei teaches in fig. 1, an inner container 1 has a double walled hollow cylinder 12 including an inner wall 11 and an outer wall 10, and also a bottom at one end and an annular wall (See annotated figure below) at the other end, a refrigerant chamber being formed between said inner wall 11 and said outer wall 10 and said annular wall A and said bottom, a chilling chamber (See annotated figure below) being arranged centrally and delimited by said inner wall 11 and said bottom.

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the combined teachings of Coetzee, Ryu, Owen and Drake with the teachings of Yomei to include a double walled hollow cylinder including an inner wall and an outer wall and also a bottom at one end and an annular wall at the other end, said refrigerant chamber being formed between said inner wall and said outer wall, and said annular wall and said bottom, and said chilling chamber being arranged centrally and delimited by said inner wall and said bottom in order to increase the rate of heat transfer that occurs between the material in the chilling chamber and the refrigerant within the refrigerant chamber. By having the frozen material in that close of proximity

to the refrigerant, the frozen material will be able to stay frozen for a longer period of time, resulting in further preservation of the frozen material.



Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu, Owen, Drake and Yomei as applied to claim 44 above and further in view of Mosby US Patent No. 6,032,481.

Regarding claim 45, Coetzee as modified above teaches the invention as disclosed but fails to explicitly teach said inner wall of said cylinder has a thread for an

element which closes said chilling chamber and is selected from the group consisting of a screw cover and a screw stopper.

However Mosby teaches in fig. 2, an inner wall (See annotated figure below) of a cylinder 3 has a thread for an element 7 which closes a chilling chamber 2a and is selected from the group consisting of a screw cover.

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the combined teachings of Coetzee, Ryu, Owen, Drake and Yomei with the teachings of Mosby to include a thread for an element which closes said chilling chamber in order to prevent heat transfer between the frozen material and the surrounding ambient air. The screw cover will prevent the frozen material from thawing, which will increase the amount of time that the frozen material can be preserved.

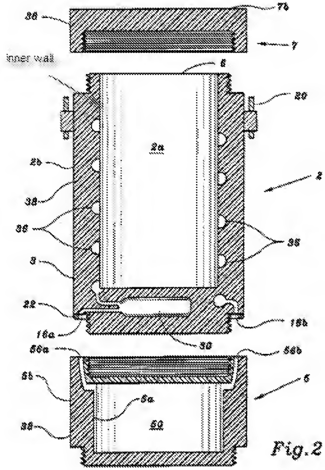


Fig.2

Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu, Owen and Drake as applied to claim 30 above and further in view of Mullens et al. US Patent No. 6,119,465.

Regarding claim 47, Coetzee as modified above teaches the invention as disclosed but fails to explicitly teach where said insulation is surrounded by a rigid protective tube having ends which are closed by a cover.

However, Mullens teaches in fig. 1, a transport container with insulation 20 surrounded by a rigid protective tube 22 having ends which are closed respectively by a cover (See annotated figure below).

It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the combined teachings of Coetzee, Ryu, Owens and Drake with the teachings of Mullens to include a rigid protective tube surrounding the insulation in order to provide a protective surface for the insulation so the insulation does not become damaged during transport of the frozen material. If the insulation becomes damaged, it does not insulate as well, so the protective tube will insure that the frozen material stays frozen during transport.

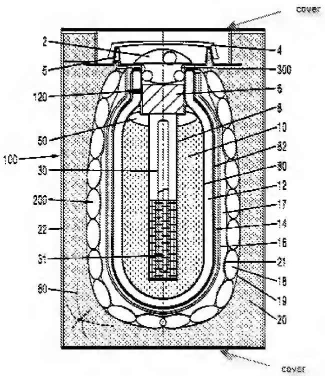


Fig. 1

(10) Response to Argument

FIRST GROUND OF REJECTION

The appellant argues that none of the cited references disclose the mentioned new features of the present invention, which as listed by the applicant are of the following: super insulation <0.005W/m K, the heat of melting of >50J/ml of the refrigerant and the choice of a pure organic substance for the refrigerant. However, this should not be found persuasive because it was stated in the rejection above that Ryu teaches a superinsulation with a coefficient of thermal conductivity of 0.005 W/m K that is used in cryogenic (low temperature) applications (column 1 line 51-column 2 line 16). Ryu further teaches superinsulation materials and selecting the appropriate material based on the intended temperature for use (column 5 lines 16-18). Ryu fails to explicitly teach a superinsulation with a coefficient of thermal conductivity of less than 0.005 W/m K. The claimed range of valves of the superinsulation of less than 0.005W/m K is recognized as a result effective variable, i.e. a variable which achieves a recognized result. In this case, an insulation with a lower coefficient of thermal conductivity results in a higher R-value (resistance) of the insulation, making it a more efficient insulation. An insulation with a higher coefficient of thermal conductivity results in a lower R-value of the insulation, making the insulation less efficient, stated another way, allows more heat to transfer through the insulation as compared to an insulation with a low coefficient of thermal conductivity. A person of ordinary skill in the art could arrive at a thermal conductivity coefficient of less than 0.005 without undue experimentation in order to increase the amount of time the frozen material is able to be transported,

preventing damage to the material. Furthermore it was noted in the rejection of claim 30 above that Coetzee as modified fails to explicitly teach the refrigerant being a pure organic substance and having a heat of melting of at least 50 J/ml. It would have been obvious matter of design choice to modify Coetzee to include a refrigerant being a pure organic substance and having a heat of melting of at least 50 J/ml, since applicant has not disclosed that having a pure organic substance or a heat of melting of at least 50 J/ml solves any stated problem or is for any particular purpose and it appears that the transport container would perform equally well with the mercury refrigerant as disclosed by Drake or with a refrigerant with a heat of melting that is sufficient to provide cooling to the transport container for long periods of time. The use of a pure organic refrigerant allows the refrigerant to be less toxic, thereby having the ability to use a refrigerant within the transport container which is environmentally friendly and it would have been obvious to a person of ordinary skill in the art at the time of invention to modify the combined teachings of Coetzee, Ryu, Owen and Drake to use a pure organic substance as the refrigerant in the transport container that has a heat of melting of 50 J/mL in order to use a refrigerant that is environmentally friendly and less toxic than other refrigerants that can provide cooling to a biological sample for a long period of time, preventing the sample from thawing and becoming damaged due to warmer temperatures. The appellant appears to have overlooked the rejection for each and every limitation of claim 30 which was addressed in the previous office action. It has thereby been considered that claim 30 has been properly rejected and the grounds of rejection should still remain.

The appellant further argues that the references contain no hint, suggestion or motivations for combining them with one another. This should not be found persuasive because it should be recognized that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the references came from the knowledge available to one of ordinary skill in the art, and therefore the cited prior art did not need to suggest the modifications that were made to Coetzee.

Furthermore the appellant argues that multiple references have been combined by the examiner, which additionally shows that the present invention cannot be considered as obvious. This should not be found persuasive because reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

SECOND GROUND OF REJECTION

The appellant argues the rejection of claim 31 and that claim 31 depends upon claim 30 and the rejection should be considered as not tenable and should be withdrawn. This should not be found persuasive, as for the same reasons with regard to claim 30 above and the examiner's response to the appellant's arguments.

THIRD GROUND OF REJECTION

The appellant argues the rejection of claims 34-35 and that claims 34-35 depend upon claim 30 and the rejection should be considered as not tenable and should be withdrawn. This should not be found persuasive, as for the same reasons with regard to claim 30 above and the examiner's response to the appellant's arguments.

FOURTH GROUND OF REJECTION

The appellant argues the rejection of claim 38 and that claim 38 depends upon claim 30 and the rejection should be considered as not tenable and should be withdrawn. This should not be found persuasive, as for the same reasons with regard to claim 30 above and the examiner's response to the appellant's arguments.

FIFTH GROUND OF REJECTION

The appellant argues the rejection of claim 44 and that claim 44 depends upon claim 30 and the rejection should be considered as not tenable and should be withdrawn. This should not be found persuasive, as for the same reasons with regard to claim 30 above and the examiner's response to the appellant's arguments.

SIXTH GROUND OF REJECTION

The appellant argues the rejection of claim 45 and that claim 45 depends upon claim 30 and the rejection should be considered as not tenable and should be withdrawn. This should not be found persuasive, as for the same reasons with regard to claim 30 above and the examiner's response to the appellant's arguments.

SEVENTH GROUND OF REJECTION

The appellant argues the rejection of claim 47 and that claim 47 depends upon claim 30 and the rejection should be considered as not tenable and should be withdrawn. This should not be found persuasive, as for the same reasons with regard to claim 30 above and the examiner's response to the appellant's arguments.

EIGHTH GROUND OF REJECTION

The appellant states that the 112 rejection of claims 30-32, 34-35, 38, 44-51 specifically with regards to the pure organic substance in claim 30 and the refrigerant which melts/solidifies as the temperature is less than -85 degrees Celsius in claim 49, the interpretation by the examiner is correct and that these statements can be acceptable, the 112 rejection should be withdrawn. It appears that the appellant agrees with the 112 rejection of the claims as noted above, however, the appellant has not amended the specification in any way in order to overcome the 112 rejection of the claims. Therefore, even through the appellant agrees with the Examiner's interpretation, the 112-1st rejection should be affirmed by appellant's own admission.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/J. K./
Examiner, Art Unit 3744
20 April 2011

Conferees:

/Cheryl J. Tyler/
Supervisory Patent Examiner, Art Unit 3744

/Michael Phillips/
RQAS